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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HICKMAN PALERMO TRUONG & BECKER/ORACLE
2055 GATEWAY PLACE
SUITE 550
SAN JOSE, CA 95110-1083

EXAMINER	
MORRISON, JAY A	

ART UNIT	PAPER NUMBER
2168	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/830,211	GE ET AL.	
	Examiner	Art Unit	
	JAY A. MORRISON	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. Claims 1-50 are pending.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 47-48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. These claims disclose a system or apparatus but do not describe hardware which executes each of the claimed steps, which is required for a system claim to be statutory. Accordingly, these claims are rejected as non-statutory for failing to disclose such hardware.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Halverson et al. ('Halverson' hereinafter) ("Mixed Mode XML Query Processing", Proceedings of the 29th VLDB Conference, Berlin, Germany, September 12-13th, 2003, pages 225-236).

As per claim 1, Halverson teaches

A method comprising the computer-implemented steps of: (see abstract)

gathering statistics by a database server about XML resources that are stored in a database repository that is managed by the database server; storing said statistics; (xml database system, section I, first paragraph; statistics of XML documents, section I, second bullet point)

and in response to a request to the database server for access to one or more XML resources from said database repository, the database server computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics. (query processor requires statistics to decide how to choose among alternative, section I, second paragraph; cost model for each algorithm where cost model is dependent on statistics, section I, second bullet point)

As per claim 2, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes in which each node is either a container or a resource, (tree structure, figure 4)

and wherein the step of gathering statistics comprises gathering one or more data from a group consisting of a total number of nodes, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node, a total number of containers, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node, a total number of nodes, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node and that are in a level of said one or more hierarchies that is immediately under a level of said specified node, a total number of containers, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node and that are in a level of said one or more hierarchies that is immediately under a level of said specified node, and a number of levels, from a root node of one of one or more hierarchies associated with one or more of said XML resources, at which a specified node is organized in said one of one or more hierarchies. (section 3.1 and figure 4)

As per claim 3, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes in which each node is either a container or a resource, (tree structure, figure 4)

and wherein the step of gathering statistics comprises gathering each of a total number of nodes, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node, a total number of containers, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node, a total number of nodes, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node and that are in a level of said one or more hierarchies that is immediately under a level of said specified node, a total number of containers, in one or more hierarchies associated with one or more of said XML resources, that are accessible via a path through a specified node and that are in a level of said one or more hierarchies that is immediately under a level of said specified node, and a number of levels, from a root node of one of one or more hierarchies associated with one or more of said XML resources, at which a specified node is organized in said one of one or more hierarchies. (section 3.1 and figure 4)

As per claim 4, Halverson teaches

the step of storing statistics comprises storing said statistics in a relational table of a database of which said database repository is part. (section 2.1.3)

As per claim 5, Halverson teaches

said relational table is a first relational table that is a different table than a second relational table in which said XML resources are stored in said database repository. (section 2.1.2 and figure 3)

As per claim 6, Halverson teaches

said relational table is a relational table in which said XML resources are stored in said database repository. (section 2.1.2)

As per claim 7, Halverson teaches

the step of storing statistics comprises storing said statistics in a hierarchical index table in which said XML resources are indexed to said database repository. (section 2.1.3 and figure 4)

As per claim 8, Halverson teaches

the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository. (section 3.2.2)

As per claim 9, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes and stored, in association with a location of one or more of said XML resources, in a column of a table in said database repository, and wherein an operator contained in at least one

of said one or more predicates is an operator that determines whether a particular XML resource can be located in said database repository through a particular specified path through a portion of one or more hierarchies associated with one or more of said XML resources. (data manager tree structure, figure 3)

As per claim 10, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes and stored, (tree structure, figure 4)

in association with a location of one or more of said XML resources, in a column of a table in said database repository, and wherein an operator contained in at least one of said one or more predicates is an operator that determines whether a particular XML resource can be located in said database repository at a terminal location of a particular specified path through a portion of one or more hierarchies associated with one or more of said XML resources. (section 3.1 and figure 4)

As per claim 11, Halverson teaches

the step of computing a computational cost comprises computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository. (section 2.1.3, second paragraph)

As per claim 12, Halverson teaches

computing said computational cost of traversing an index comprises computing a computational cost associated with one or more CPUs used for said traversing. (section 3.2.2, third paragraph)

As per claim 13, Halverson teaches

computing said computational cost of traversing an index comprises computing a computational cost associated with reading data blocks in which portions of said index are stored. (section 3.2.2, second paragraph)

As per claim 14, Halverson teaches

computing said computational cost of traversing an index comprises computing (a) a computational cost associated with one or more CPUs used for said traversing and (b) a computational cost associated with reading data blocks in which portions of said index are stored. (section 2.1.3, fourth paragraph)

As per claim 15, Halverson teaches

the step of computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository. (section 3.2.1, fourth paragraph)

As per claim 16, Halverson teaches

said request for access to one or more XML resources from said database repository is a SQL query. (section I, second paragraph)

As per claim 17, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes and stored, (tree structure, figure 4)

in association with a location of one or more of said XML resources, in a column of a table in said database repository, and wherein said SQL query comprises a mechanism for providing at least one possible path through one or more hierarchies associated with one or more of said XML resources to each node of said XML resources. (section 3.1 and figure 4)

As per claim 18, Halverson teaches

the step of computing a computational cost comprises computing a computational cost component for one or more predicates, from said request, that contain an operator in conjunction with said mechanism acting on said database repository. (section 3.2.1, second paragraph)

As per claim 19, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes and stored, (tree structure, figure 4)

in association with a location of one or more of said XML resources, in a column of a table in said database repository, and wherein said SQL query comprises a mechanism for providing all possible paths through one or more hierarchies associated with one or more of said XML resources to each node of said XML resources. (section 3.1 and figure 4)

As per claim 20, Halverson teaches

the step of computing a computational cost comprises computing a computational cost component for one or more predicates, from said request, that contain an operator in conjunction with said mechanism acting on said database repository. (section 3.1 and figure 4)

As per claim 21, Halverson teaches

said database repository is part of a relational database management system. (section 2.1.2, data manager)

As per claims 22-37,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 1-16 and are similarly rejected.

As per claim 38, Halverson teaches

A method comprising the computer-implemented steps of: (see abstract)

gathering, by a database management system, statistics about how many nodes within one or more XML resources that are stored in a repository of said database management system satisfy certain criteria; (statistics used in cost model, section 3.1, first paragraph; table 1)

storing said statistics in said database management system; (statistics capturing, section I, second bullet point)

and the database management system using the statistics to determine how to process a query that accesses the one or more XML resources. (query processor requires statistics to choose among alternatives, section I, second paragraph)

As per claim 39, Halverson teaches

the step of storing comprises storing said statistics as an XML data type in a schema-based table in said database management system. (section 2.1.3)

As per claim 40, Halverson teaches

said one or more XML resources are logically organized as a hierarchy of nodes in which each node is either a container or a resource, (tree structure, figure 4)

and wherein the step of gathering statistics comprises gathering each of a total number of nodes, in one or more hierarchies associated with said one or more XML resources, that are accessible via a path through a specified node, a total number of containers, in one or more hierarchies associated with said one or more XML resources, that are accessible via a path through a specified node, a total number of nodes, in one

or more hierarchies associated with said one or more said XML resources, that are accessible via a path through a specified node and that are in a level of said one or more hierarchies that is immediately under a level of said specified node, a total number of containers, in one or more hierarchies associated with said one or more XML resources, that are accessible via a path through a specified node and that are in a level of said one or more hierarchies that is immediately under a level of said specified node. (section 3.1 and figure 4)

As per claim 41,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 38 and is similarly rejected.

As per claim 42, Halverson teaches

A method comprising the computer-implemented steps of: (see abstract)

in response to a request for access to one or more XML resources from a database repository within a database management system, (given query, section I, second paragraph)

accessing, from said database management system, statistics about a structure of a hierarchy associated with said one or more XML resources; (statistics used in cost model, section 3.1, first paragraph; table 1)

and computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository,

based on said statistics. (query processor requires statistics to decide how to choose among alternative, section I, second paragraph; cost model for each algorithm where cost model is dependent on statistics, section I, second bullet point)

.

As per claim 43, Halverson teaches

the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository. (section 3.1 and figure 4)

As per claim 44, Halverson teaches

the step of computing a computational cost comprises computing a computational cost of traversing, to locate particular XML resources specified in said request, an index in which said XML resources are indexed to said database repository. (index manager, section 2.1.3)

As per claim 45, Halverson teaches

the step of computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository. (section 3.1 and figure 4)

As per claim 46,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 42 and is similarly rejected.

As per claim 47, Halverson teaches

A database system comprising: (see abstract)

an XML data repository within a relational database management system; (xml database system, section I, first paragraph; data manager, section 2.1.2)

and a query optimizer that is configured to receive a database query and, in response to said query, formulate a query execution plan based on computational costs of access paths associated with XML data stored in said repository, (query plans for given query, section I, second paragraph; cost model for each algorithm, section I, second bullet point; cost formulas, section 3.1, first paragraph and table 1)

wherein said computational costs are based on statistics characterizing an organizational structure of said XML data. (statistics used in cost model, section 3.1, first paragraph; table 1)

As per claim 48,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected.

As per claim 49, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes, (tree structure, figure 4)

and wherein the step of gathering statistics comprises gathering statistics about a median depth of a plurality of paths to a plurality of nodes in one or more hierarchies associated with one or more of said XML resources, and wherein the plurality of nodes are accessible via a path through a specified node. (section 3.1 and figure 4)

As per claim 50, Halverson teaches

each of said XML resources is logically organized in a hierarchy of nodes, (tree structure, figure 4)

and wherein the step of gathering statistics comprises gathering statistics about a maximum depth of a plurality of paths to a plurality of nodes in one or more hierarchies associated with one or more of said XML resources, and wherein the plurality of nodes are accessible via a path through a specified node. (section 3.1 and figure 4)

Response to Arguments

6. Applicant's arguments with respect to claims 1-50 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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